



U.S. Department of Energy  
National Transportation Program

# **Program Manager's Guide to Transportation Planning**

**November 1998**





# U.S. Department of Energy National Transportation Program

## Program Manager's Guide to Transportation Planning

### Table of Contents

<b>I. Introduction .....</b>	<b>1</b>
A. DOE National Transportation Program .....	2
B. Federal Laws and Regulations.....	2
C. Transportation Planning Flowchart.....	7
<b>II. Overview of Transportation Planning.....</b>	<b>9</b>
A. Assembling a Management Team.....	9
B. Identifying and Involving Interested and Affected Parties .....	11
C. Characterizing the Material .....	11
D. Analyzing and Documenting Environmental Impacts .....	11
E. Determining Need for and Scope of the Transportation Plan.....	12
F. Transportation Planning Resources .....	12
<b>III. Stakeholder Involvement .....</b>	<b>15</b>
A. Institutional Considerations .....	15
B. Applicable Regulations and Requirements .....	16
C. Public Information Considerations.....	17
D. Selected Stakeholder Involvement Resources.....	17
E. Selected Transportation Information Products.....	18
F. Other Contacts.....	19
<b>IV. Operational Considerations.....</b>	<b>23</b>
A. Transportation Management .....	23
B. Applicable Regulations and Requirements .....	23
C. Planning Considerations.....	23
D. Operational Resources.....	24
E. Automation and Systems Support .....	25
<b>V. Emergency Planning Considerations.....</b>	<b>27</b>
A. Offsite Emergency Response Roles and Responsibilities .....	27
B. DOE Site Emergency Management Planning .....	28
C. Emergency Management Requirements.....	29
D. Available Resources.....	30
<b>VI. For More Information.....</b>	<b>33</b>
<b>VII. Potential Components of a Transportation Plan .....</b>	<b>35</b>
<b>VIII. Transportation Planning Matrix .....</b>	<b>37</b>
<b>IX. Acronyms.....</b>	<b>71</b>
<b>X. Work Plan Information .....</b>	<b>73</b>



# I. Introduction

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The purpose of this *Program Manager's Guide to Transportation Planning* is to provide information on all aspects of the DOE National Transportation Program (NTP). NTP has published the Guide to assist U.S. Department of Energy (DOE) program managers at Headquarters and at Field Offices in fulfilling their roles and responsibilities related to the transportation of hazardous materials. Transportation plans for spent nuclear fuel, cesium, and transuranic waste shipments provide examples of shipment planning that include regulatory review and appropriate stakeholder involvement (full citations on page 12). This Guide addresses all aspects of shipment planning and identifies selected resources, including DOE and contractor personnel, documents, regulations, and external organizations.

DOE transports radioactive and other hazardous materials throughout its complex on a daily basis. The safety record for these shipments is excellent. However, planning for and safely transporting these materials requires substantial teamwork among traffic managers; emergency response planners; environment safety and health professionals, and public participation staff. Program managers are responsible for ensuring that this teaming takes place.

This Guide identifies the components necessary to support transportation activities: program planning, stakeholder involvement, transportation operations, and emergency management planning. In practice, activities within these components often overlap, and this requires coordination and

flexibility in planning and decision making.

This Guide contains two charts that illustrate steps to transportation: a flowchart depicting transportation planning decisions and procedures and a matrix of transportation operational and coordination functions with lists of relevant regulations, DOE orders, guidance documents and other materials for each operational function.

The planning flowchart on page 7 depicts a variety of circumstances and procedures affecting DOE shipments of hazardous materials. These range from basic situations requiring minimal regulatory compliance to those requiring environmental assessment and impact analyses and public participation and review.

The Transportation Planning Matrix starting on page 37 covers task-level operational components of the overall transportation activity and related coordination functions. **Regulatory compliance is always the first priority, and quality management is conducted in all operations.** Each functional area is highlighted and corresponding relevant regulations, DOE orders, and other guidance materials are listed.

## **A. DOE National Transportation Program**

The National Transportation Program (NTP) is the DOE corporate center for hazardous materials packaging and transportation, supporting the infrastructure and coordinating transportation activities for all non-classified shipments of hazardous material. The NTP is responsible for ensuring the availability of safe, secure and economical transport services, consistent regulatory implementation, coordinated institutional outreach activities, and emergency preparedness programs.

As required for specific shipping campaigns, the NTP assists in resolving policy questions, supporting systems integration, interacting with interested external parties, and coordinating regulatory issues that may arise between its client programs and Federal, State, and Tribal regulators. The NTP also provides packaging systems development and management for its client programs.

The Transportation Emergency Management Team manages the DOE Transportation Emergency Preparedness Program (TEPP) and integrates DOE's existing emergency management capabilities into a program addressing preparedness for transportation incidents involving DOE shipments. TEPP provides policy, guidance, and technical expertise for the development of comprehensive programs in the field to address State, Tribal, and local government concerns. These concerns include the response to and mitigation of incidents and emergency situations involving DOE transportation activities.

More information on the DOE National Transportation Program can be found on the NTP Web Site at <http://www.ntp.doe.gov>.

## **B. Federal Laws and Regulations**

Portions of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Resource Conservation and Recovery Act (RCRA), the Nuclear Waste Policy Act (NWPA), and the Code of Federal Regulations (CFR) are all relevant to the transportation activities of the U.S. Department of Energy. Each of these is briefly described below. More specifics are found in the lists of regulations found with the Transportation Planning Matrix in Section VII.

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986, contains Federal laws related to advance planning, transport mode selection, shipment tracking, and delivery verification and feedback.

The Resource Conservation and Recovery Act (RCRA) of 1976 has relevance to advance planning, material characterization, transport mode selection, shipment tracking, and delivery verification and feedback.

The Nuclear Waste Policy Act (NWPA) requires DOE to provide assistance for training of State, local, and Tribal personnel who might be affected by spent commercial fuel transportation. This is relevant to advance planning, routing

decisions, consignment scheduling, shipment tracking, and delivery verification and feedback [Part 180(c)].

Under Title 10 of the Code of Federal Regulations (Energy)<sup>1</sup>, the following parts are relevant to DOE transportation activities:

- 10 CFR 20 mandates the use of a manifest by a hazardous waste generator licensee.
- 10 CFR 71 contains NRC requirements for approved Type B packages for shipments of radioactive materials (Subpart E) and includes definitions of various materials and subsets relevant to material characterization (71.4).
- 10 CFR 73 provides for NRC approval of rail and highway routes used for shipments of spent nuclear fuels and sets forth escort and notification requirements relevant to consignment scheduling, routing decisions, and shipment tracking.  
  
provides for operational and emergency response training requirements for material handling (Appendix D). These are relevant to documentation, marking, labeling, placarding, material handling, and package selection.  
  
includes definitions of various material and subsets (73.2) and exemptions for certain materials (73.6).

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<sup>1</sup> <http://www.access.gpo.gov/cgi-bin/cfrassemble.cgi?title=199810>

10 CFR 1021 contains steps to be taken by DOE to be in compliance with NEPA. These are relevant to the advance planning process.

Under Title 29 of the Code of Federal Regulations (Occupational Safety and Health)<sup>2</sup>, the following parts are relevant to DOE transportation activities:

29 CFR 1910 covers hazardous substance cleanup, remediation and response operations and includes safety and health requirements, and site characterization requirements needed for operational and emergency response training, under OSHA mandate relevant. OSHA regulations are relevant to material handling; documentation; marking, labeling, and placarding; and package selection (1910.120).

Under Title 40 of the Code of Federal Regulations (Environmental Quality)<sup>3</sup>, the following parts are relevant to DOE transportation planning and implementation activities:

- 40 CFR 261 identifies those solid wastes to be managed as hazardous wastes and exclusions and discusses characteristics and properties of ignitability, corrosiveness, reactivity, or toxicity relevant to material characterization.
- 40 CFR 262 mandates the use and form of the Uniform Hazardous Waste Manifest for shipment

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<sup>2</sup> <http://www.access.gpo.gov/cgi-bin/cfrassemble.cgi?title=199829>  
[http://www.osha-slc.gov/OshStd\\_toc/OSHA\\_Std\\_toc.html](http://www.osha-slc.gov/OshStd_toc/OSHA_Std_toc.html)

<sup>3</sup> <http://www.access.gpo.gov/cgi-bin/cfrassemble.cgi?title=199840>

documentation. Part 1500 contains the Council on Environmental Quality Implementing Regulations relevant to DOE's advance planning process for transportation (1500.08).

Under Title 49 of the Code of Federal Regulations (Transportation)<sup>4</sup>, the following parts are relevant to DOE transportation activities:

- 49 CFR 171 provides general information and definitions needed for material characterization and governs notifications when radioactive material incidents involve a release (171.15).
- 49 CFR 172 lists and classifies hazardous materials and related requirements in the Hazardous Materials Table. contains requirements for proper entries on shipping papers and use of the hazardous waste manifest (Subpart C); contains marking (Subpart D), labeling (Subpart E), and placarding (Subpart F) requirements.
- describes shipper and carrier responsibilities; contains emergency response requirements relevant to transport mode selection, and provides emergency response information for shipping papers (Subpart G).
- contains hazardous materials employee operational training requirements (Subpart H).

- 49 CFR 173 covers the preparation of hazardous materials for transportation (Subpart B), DOT performance-based packaging requirements, material preparation and packaging requirements or exceptions (Subpart C), and shipper responsibility for hazardous materials classification and consignee notification (173.22).
- 49 CFR 174 contains general handling and loading requirements or exceptions (Subpart C) and shipping regulations based upon mode of carriage (174.177).
- 49 CFR 175 contains loading, unloading, and handling requirements (Subpart B).
- 49 CFR 176 contains general handling and storage requirements for shipments by water (Subpart C) and covers radioactive incidents involving a release of material (176.710).
- 49 CFR 177 contains loading and unloading requirements for shipments by public highway (Subpart B).

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<sup>4</sup> <http://www.access.gpo.gov/cgi-bin/cfrassemble.cgi?title=199749>



49 CFR 397 sets forth DOT requirements related to routing decisions and communication of route plans, risk avoidance measures for carriers, tracking and communications while shipments are underway, and DOT/FHWA notification after an HRCQ shipment is accepted (397.101).

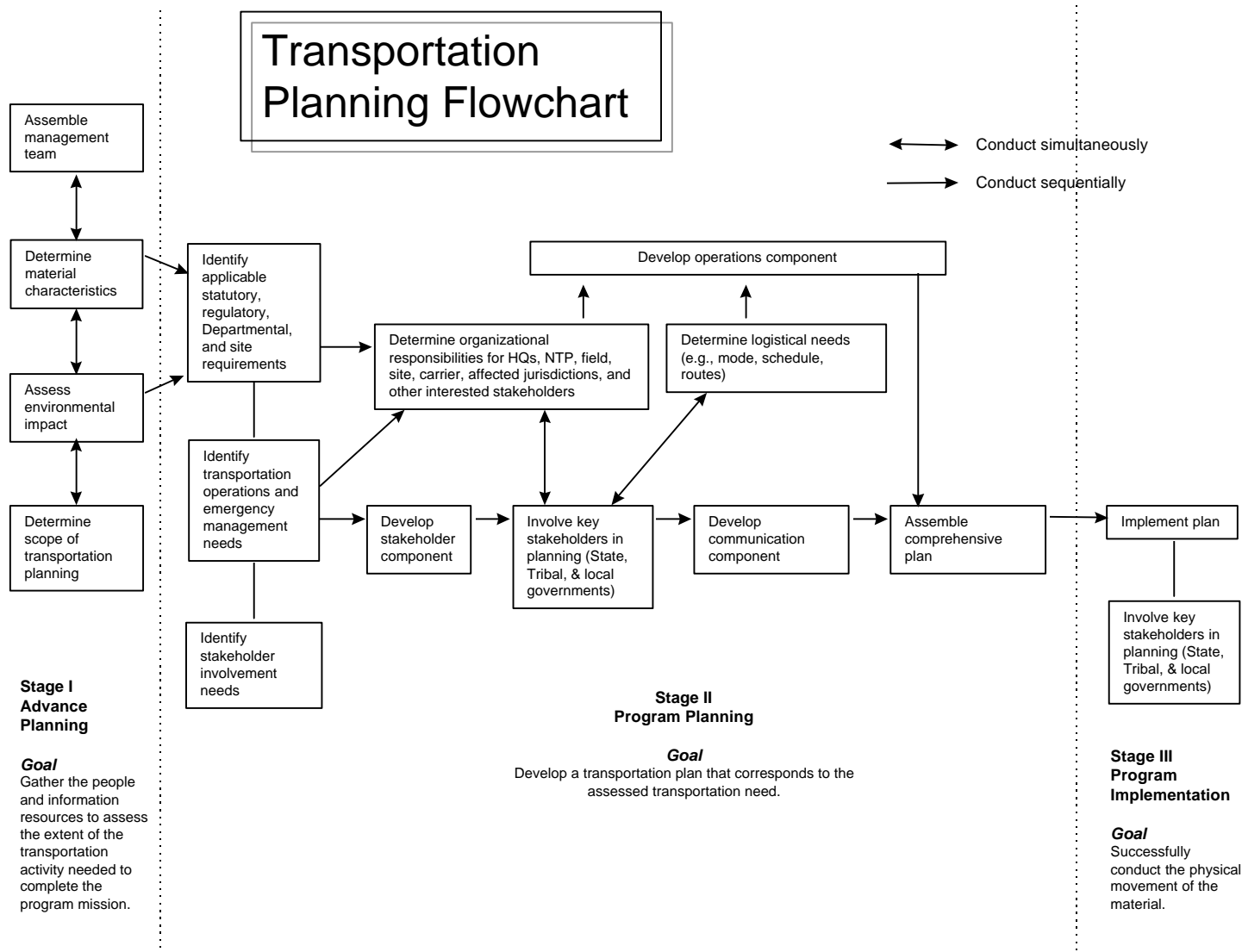
specifies the FHWA procedures by which States may establish designated routes (397.103).

Title 49 of the United States Code (Transportation), Part 51165, provides information on technical assistance involving DOT planning and training grants relevant to the advance planning process, routing decisions, shipment tracking, and delivery verification and feedback. Regulations pursuant to this section of the Code are found at 49 CFR Part 110.

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<sup>5</sup> <http://frwebgate1.access.gpo.gov/cgi-bin/waisgate.cgi?WAISdocID=9997517181+4+0+0&WASAction=retrieve>







## II. Overview of Transportation Planning

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Offsite transportation requires varying levels of planning and development to successfully move DOE material. The level of program planning and development needed is based on a number of considerations. Decisions are based first on statutory, regulatory, and Departmental requirements. Other considerations include the relative hazard of the material involved, the public's perception of the risks associated with the material and its shipment, key stakeholders who have regulatory authority or responsibility for public safety, the number of shipments needed, and the mode and route shipments may require.

The level of program planning and development will vary, but early planning is essential. Early planning includes (A) assembling a management team to assess program needs, (B) characterizing the material in question, (C) analyzing and documenting potential environmental impacts, (D) determining the need for and scope of the transportation plan<sup>6</sup>, and (E) identifying and involving interested and affected parties, including other DOE offices. These elements are discussed below.

### A. Assembling a Management Team

Areas of expertise involved in transporting hazardous materials include material handling and packaging; operations logistics (traffic management); stakeholder involvement and public

information; environment, safety, and health; and emergency preparedness.

Specific responsibilities within these areas of expertise and the titles of people charged with meeting those responsibilities vary from site to site and across DOE programs. At a minimum, the following areas of expertise should be represented on all transportation planning teams:

***Program Management.*** Program managers have line authority and responsibility for successful completion of an assigned activity. In addition to overall program planning, program managers are responsible for coordinating various aspects of transportation planning and implementation including early planning, material characterization, stakeholder involvement, technical assistance, and logistics.

***Material Handling and Packaging.*** Depending on the particular DOE site, responsibility for on-site handling, package selection, and material documentation may belong to an individual or members of an entire department. A staff member with expertise in this area must work closely with the traffic manager to ensure the material is packaged and prepared for shipment in compliance with applicable regulations and internal requirements.

***Operations Logistics.*** Operations logistics such as routing, pricing, service requirements, mode selection, document preparation, material handling, and carrier selection are the responsibility of either a site traffic manager or a program transportation manager. In some instances these positions

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<sup>6</sup> See Section VII for a list of potential components of a transportation plan.

may reside in the same person. This person must often sign documents as the "shipper of record" and therefore has a vested interest in ensuring that a shipment complies with applicable Federal, State, Tribal, and local statutory, regulatory, and procedural requirements.

***Stakeholder Involvement and Public Information.*** The principal staff positions in this area are public affairs and public participation. Public affairs professionals develop and disseminate information about program actions, interact with media sources, respond to information requests, and facilitate public forums. Public participation specialists cultivate meaningful and sustained interactions with stakeholders to afford them a role in shaping publicly acceptable program decisions. Public participation staff in the field will be familiar with local community relations needs and stakeholder concerns. These specialists can identify and facilitate interactions with appropriate organizations and individuals outside the DOE organization. State, Tribal, and local government officials need to decide who should be informed about shipments and how to reach all other interested parties.

***Environment, Safety, and Health (ES&H).*** Although the responsible staff position may vary from site to site, ES&H experts (e.g., health physicists) ensure that radioactive and other hazardous materials are handled in accordance with Federal and State regulations and DOE procedures governing human and environmental exposure to such material. ES&H staff assists in packaging identification and certification, environmental review requirements, and emergency planning.

***Emergency Preparedness.*** The Transportation Emergency Management Team is comprised of Headquarters personnel and Transportation Emergency Preparedness Program (TEPP) Coordinators designated at Operations Offices and Field Elements.<sup>7</sup> The Coordinator is the DOE regional point of contact for transportation emergency planning with State, Tribal and local governments within their jurisdiction.

These emergency management specialists are responsible for working with stakeholder groups, State, Tribal and local governments and the DOE community to assist in the development and implementation of an integrated transportation emergency management program for planning and preparedness. The TEPP Coordinator is also responsible for developing, maintaining, and implementing transportation emergency response plans for offsite shipments. Other responsibilities include planning and coordinating with DOE public affairs and transportation managers, ensuring that DOE occurrence reporting requirements (DOE Order 232.1) are met, and working with emergency responders in jurisdictions along shipping routes and with other DOE program offices in support of emergency responders at all levels of government. Providing technical expertise to enable affected jurisdictions to meet their public safety responsibilities is an important element of the TEPP.

A similar planning team can be formed with Headquarters if the program manager requires technical support or additional resources. For major shipping campaigns, representatives from

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<sup>7</sup> <http://www.hanford.gov/doe/tmp/tranmap2.htm>

the DOE National Transportation Program (NTP) can support the field office and program management team to provide experience from and consistency with other DOE transportation activities.

## **B. Identifying and Involving Interested and Affected Parties**

A transportation plan that will result in an effective transportation activity consists of more than the physical aspects of handling and transporting material. A successful transportation planning process begins early and involves the DOE management team and key stakeholders with responsibilities and interests in the safe shipment of DOE materials.

When DOE has involved Federal, State, Tribal, and local officials in planning for especially contentious shipments of radioactive materials, the result has been a more effective process with a team of informed and involved parties.

## **C. Characterizing the Material**

Material characterization is the key step in determining the regulatory requirements for packaging and shipment. These requirements in turn dictate the degree of planning needed to successfully complete the program mission.

The Material Characterization Program, with its Service Center at the DOE-Idaho Operations Office, can provide assistance to program managers for characterizing material. The Characterization Program (CP) collects and compiles sampling

and analysis procedures in the DOE Methods Compendium. The CP is also a source of information on U.S. Environmental Protection Agency (EPA) regulatory methods for sampling and analysis. These procedures are provided to laboratories supporting EM programs to ensure proper characterization occurs. Field office materials specialists in both transportation and characterization coordinate activities to ensure proper packaging is used. The NTP also offers other resources, such as basic and advanced training courses in packaging requirements and transportation regulations to ensure that all personnel are trained in accordance with Department of Transportation hazardous material employee training requirements.

The Hazardous Materials Table found in 49 CFR 172.101 should also be used for hazardous materials characterization. The table lists and classifies hazardous materials and specifies modal and placarding, marking, and labeling requirements.

## **D. Analyzing and Documenting Environmental Impacts**

The program manager is responsible for ensuring that environmental documentation related to the proposed activity is adequate and current. Experience has shown that communication with environmental specialists to review existing documentation can avoid delays imposed either by DOE oversight or by regulatory and legal challenges.

The National Environmental Policy Act (NEPA) of 1969 requires consideration of environmental values and other factors in Federal planning and decision making. NEPA establishes

three levels of review based on the significance of a potential action's impact on the human or natural environment. Incorporating NEPA considerations early in program planning is essential in meeting management responsibility for environmental compliance, and ultimately completing the proposed mission.

DOE Order 451.1A places responsibility for analyzing potential impacts and preparing timely and adequate NEPA documents for environmental restoration or waste management actions on DOE line organizations (including program managers) implementing those actions. Managers are also required to notify host States and Tribes and, as appropriate, adjacent States and Tribes of initial determinations regarding the level of NEPA review for all significant proposed DOE actions. Thus, the NEPA review process can be a catalyst for engaging stakeholders in the early planning of program actions.

Each proposed action presents a unique set of circumstances and potential environmental impacts. Determining an appropriate level of NEPA review, adequately assessing the impacts, and preparing corresponding documents may be difficult to reduce to a simple formula. The transport of radioactive and other hazardous materials is always conducted in connection with a broader program action and should be considered in the NEPA review of those broader program actions.

## **E. Determining Need for and Scope of the Transportation Plan**

Not all shipments of hazardous materials require lengthy transportation plans. However, even shipments of relatively short distances and limited duration can benefit from action plans that help determine whether all applicable requirements have been met. A written plan, when deemed appropriate by the program manager, should address transportation operations, emergency management, stakeholder involvement, and communications for program implementation. Some examples of existing plans are listed below in Section F, Transportation Planning Resources.

## **F. Transportation Planning Resources**

***National Environmental Policy Act (NEPA) Compliance Guide Reference Book.*** Published in September 1994 by DOE's Office of Environment, Safety and Health -- Office of NEPA Oversight, this document contains current regulations and guidance from the Council on Environmental Quality, DOE, the Department of State, and the EPA related to compliance with NEPA. Documents in the binder are also available through the Office of NEPA Oversight at (202) 586-4600.<sup>8</sup>

***Recommendations for the Preparation of Environmental Assessments and Environmental Impact Statements.*** Published in May of 1993 by DOE's Office of Environment, Safety and Health, "The Green Book" should aid those

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<sup>8</sup> <http://tis.eh.doe.gov/nepa/tools/guidance/nepacg.htm>



responsible for preparing and reviewing NEPA documents. It should assist preparers and reviewers in focusing on significant environmental issues, adequately analyzing environmental impacts, and effectively presenting the analysis to decision-makers and the public.<sup>9</sup>

***Environmental Impact Statement Checklist.*** Published in November 1997 by the U.S. Department of Energy Office of Environment, Safety, and Health -- Office of NEPA Policy and Assistance, this comprehensive checklist aids in preparing and reviewing DOE environmental impact statements. Specific issues related to transportation impacts are addressed on page 22 of the document.<sup>10</sup>

***Idaho Spent Fuel Plan.*** Produced by the National Spent Fuel Program at Idaho National Engineering and Environmental Laboratory, this document is a management plan for the overall spent fuel program.<sup>11</sup>

***U.S. Department of Energy Cesium Transportation Plan.*** Produced by the DOE Richland Operations Office, this document contains organizational responsibilities, shipment schedule, advance information and shipment tracking, emergency considerations, and above-regulatory activities for the safe routine transport of Cesium capsules from Northglenn, Colorado, to DOE's Hanford Site in the State of Washington.

***U.S. Department of Energy, Foreign Research Reactor Nuclear Spent Fuel Shipments, Transportation Plan for Rail***

***or Motor Carrier Transport, Charleston, SC, to Savannah River Site.*** Produced by the DOE Savannah River Operations Office, this document summarizes transportation activities, organizational responsibilities, emergency preparedness guidelines, and other methods for achieving safe transport of foreign research reactor spent nuclear fuel from Europe to the Savannah River Site.

***Nitric Acid Transportation Plan.*** Produced by the DOE Richland Operations Office, this document details transportation and emergency response planning and other activities related to the safe shipment of low specific activity nitric acid from the Hanford Site to the East Coast and then overseas to facilities in the United Kingdom.

***Brookhaven Spent Fuel Transportation Plan.*** Produced by the DOE Brookhaven Area Office, this document details transportation and emergency planning activities related to a multi-modal shipment (highway and water) of domestic research reactor spent fuel from Brookhaven National Laboratory on Long Island to the Savannah River Site.

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<sup>9</sup> [http://tis.eh.doe.gov/nepa/tools/guidance/reccom/toc\\_rec.htm](http://tis.eh.doe.gov/nepa/tools/guidance/reccom/toc_rec.htm) - toc

<sup>10</sup> <http://tis.eh.doe.gov/nepa/tools/guidance/eischk.pdf>

<sup>11</sup> [http://tikal.inel.gov/ppln\\_int.htm](http://tikal.inel.gov/ppln_int.htm)

***National TRU Waste Management Plan.*** Produced by the DOE Carlsbad Area office, this document covers the range of activities required of the Waste Isolation Pilot Plant (WIPP) in regulatory compliance, risk reduction, mortgage reduction, and effective WIPP utilization.<sup>12</sup>

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<sup>12</sup> <http://www.wipp.carlsbad.nm.us/wtp.htm>

### III. Stakeholder Involvement

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#### A. Institutional Considerations

Even with all the extra safety precautions in place at DOE, stakeholder involvement in transportation planning is essential to ensure a program's success. Transportation, particularly of radioactive or other hazardous materials and hazardous wastes, is a highly visible activity that everyone --DOE, State, Tribal, and local authorities and the general public -- wants to see safely accomplished. Early and substantive involvement with key stakeholders, including the public, can minimize disputes, costly delays, and the potential for litigation.

For example, coordinating with interested stakeholders, particularly State, Tribal, and local law enforcement and emergency response officials, can be valuable in explaining to the public the need for a transportation action and describing preparations that have been made. Public participation, public affairs, and emergency preparedness experts in the field and at Headquarters can ensure the appropriate level and timing for public involvement that will help program managers in accomplishing the assigned mission.

The first step in planning for effective public involvement is to determine which parties will have a vested interest in the shipment. In addition to Federal, State, Tribal, and local governmental officials with regulatory enforcement, emergency management, or public safety responsibilities, public information officers, the media, and educational groups may be constituents. Environmental, public interest, and other leaders may also want to participate at various stages of the transportation process.

Because Tribes are sovereign nations and often present unique legal and cultural issues, DOE planning should include direct involvement with Tribal officials, rather than coordination through States or other entities.

A second step in planning for effective public involvement is to assess the needs of the stakeholders. For example, TEPP Coordinators conduct needs assessments with emergency responders at all levels of government. The assessment of State, Tribal and local response capabilities assists TEPP in identifying State, Tribal and local government emergency management concerns. TEPP planning, training, and program implementation assistance can then be made available to address these concerns.

The National Transportation Program (NTP) has established several forums to involve key internal and external stakeholders in transportation activities. Internal coordination is accomplished through the Senior Executive Transportation Forum. The Senior Executive Transportation Forum is composed of senior managers from all programs with transportation activities and representatives from the DOE Office of Congressional and Public Affairs and Office of the General Counsel. The Senior Executive Forum addresses crosscutting transportation issues such as development of uniform protocols, funding assistance, corporate communication, and other transportation policy issues.

DOE works with external stakeholders on an ongoing basis through established forums, such as the Transportation External

Coordination Working Group (TEC/WG), to address transportation related issues. The TEC/WG is composed of State, Tribal, and local organizations; industry; and professional and technical associations. Issues addressed at the TEC/WG's semiannual meetings include planning for transportation, routing, emergency preparedness and training, and technical assistance.

Another forum, the Local Government Network (LGN), provides local officials with opportunities to meet with DOE program and field office representatives to discuss how DOE ships its materials and to share information about technical assistance, including training, that is available to support local needs. The LGN also issues a quarterly newsletter to about 8,000 local officials nationally. This and other information products related to the TEC/WG and LGN are also available and distributed through the World Wide Web.<sup>13</sup>

Regional associations of States such as the Western Governors Association, Southern States Energy Board, and Midwest and Northeastern Offices of the Council of State Governments work with programs, sites, and the NTP on detailed planning for high visibility shipments. In recent campaigns, working groups were formed with DOE to develop transportation plans for specific shipments. Information plans are developed as part of the transportation plan detailing how the general public will be informed. An approach to planning for transportation with Tribal governments is being developed with Sites and Field Offices.

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<sup>13</sup> <http://www.uetc.org/>

## B. Applicable Regulations and Requirements

Three major Federal statutes that govern DOE environmental cleanup and restoration activities have public participation requirements:

- The Comprehensive Environmental Response Compensation and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986<sup>14</sup>
- The Resource Conservation and Recovery Act of 1976, as amended by the Hazardous and Solid Waste Amendments of 1984<sup>15</sup>
- The National Environmental Policy Act of 1969<sup>16</sup>

The American Indian Religious Freedom Act<sup>17</sup> and the U.S. Department of Energy Environmental Justice Strategy Executive Order 12898<sup>18</sup> also include public participation requirements.

Programs may have additional responsibilities that are mandated by Congress, as is the case with the Waste Isolation Pilot Plant (WIPP) program<sup>19</sup> and the Civilian Radioactive Waste Management Program.<sup>20</sup>

The DOE Office of Public Affairs has issued a DOE Public Involvement Policy and the Office of Intergovernmental Affairs has established an American Indian Policy.<sup>21</sup> The DOE Office of

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<sup>14</sup> <http://www.epa.gov/superfund/whatissf/cercla.htm>

<sup>15</sup> <http://www.epa.gov/ncepihom/Catalog/EPA530R96007.html>

<sup>16</sup> <http://tis-nt.eh.doe.gov/nepa/>

<sup>17</sup> [http://tis-nt.eh.doe.gov/oepa/law\\_sum/AIRFA.HTM](http://tis-nt.eh.doe.gov/oepa/law_sum/AIRFA.HTM)

<sup>18</sup> <http://www.gsa.gov/pbs/pt/call-in/eo12898.htm>

<sup>19</sup> <http://www.wipp.carlsbad.nm.us/wipp.htm>

<sup>20</sup> <http://www.rw.doe.gov/>

<sup>21</sup> <http://www.hanford.gov/doe/inp/netpolic.htm>

Environmental Management (EM) Office of Planning, Policy and Budget serves as a coordination point for all public information and involvement activities within DOE Environmental Management programs and has issued policy and guidance for public involvement. The Office of Environmental Management's Office of Intergovernmental and Public Accountability also works with field offices and recently established site specific advisory boards to assist them in identifying and addressing site-specific issues. This office also operates the Environmental Management Information Center.<sup>22</sup>

### C. Public Information Considerations

The ability to effectively target and communicate with interested public members is essential to stakeholder involvement. Information products that are clear, balanced, and informative can guide the direction of public inquiry, help allay some public concerns, and increase credibility with the public. For shipping campaigns that are likely to be extensive, a written communications plan should be included as part of a broader transportation plan.

Public affairs professionals in the field can help the program manager determine what materials and strategies may be required to support a particular mission. These materials may include brochures, fact sheets, press releases, media kits, exhibits, or videotapes. For major shipping actions, an aggressive communications program may be needed prior to shipping. Coordination of communications activities with State,

Tribal, and local governments is useful to provide a consistent message about planned shipments.

### D. Selected Stakeholder Involvement Resources

Resources that address public involvement, transportation and emergency response issues are listed below.

***EM Public Participation Policy and Guidance.*** This policy describes the context in which DOE decisions are made, explains why public participation is needed, and outlines EM's public participation plans by DOE EM Headquarters and field organizations.

***DOE American Indian Policy.*** The DOE American Indian Policy outlines principles to be followed by DOE in its interactions with American Indian Tribes. The Policy provides general guidance to DOE personnel for management actions affecting American Indians and emphasizes implementation of such activities in a knowledgeable and sensitive manner.

For information on DOE's National Transportation Program and to obtain the following materials, call the Alliance for Transportation Research (ATR) Transportation Resource Exchange Center (T-REX) at toll free number 877/287-8739. Also, consult the T-REX World Wide Web site at <http://www.unm.edu/~trex/>.

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<sup>22</sup> <http://www.em.doe.gov/em22/cemi.html>, E-mail: [eminfo@erols.com](mailto:eminfo@erols.com), Telephone: 800/736-3282

## **E. Selected Transportation Information Products**

### **Booklets**

- Transporting Radioactive Materials, Answers to Your Questions is designed for the general public to answer questions about transporting radioactive materials. (1998)
- Emergency Preparedness Transportation Incidents Involving Radioactive Materials provides an overview of the Federal emergency response program and describes responsibilities of participating agencies. (1990)
- Transportation of Radioactive Materials: Q&A about Incident Response answers questions frequently asked by firefighters, law enforcement officers, and emergency medical services personnel. (1992)

### **Factsheets<sup>23</sup>**

- Highway Routing of Radioactive Material Shipments
- International Transportation of Radioactive Material<sup>24</sup>
- Radioactive Material Shipping Regulations<sup>25</sup>
- Spent Fuel and High-Level Radioactive Waste Transportation<sup>26</sup>
- Transportation of Spent Nuclear Fuel<sup>27</sup>
- TRANSCOM - A Transportation Tracking and Communications System

- Transportation in the Nuclear Fuel Cycle
- Radioactive Materials Package Testing
- Transportation of Radioactive Materials for Medicine and Industry
- The U.S. Department of Energy Shipping Activity
- Transporting DOE's Low-Level Radioactive Waste

### **Exhibits**

- Emergency Preparedness (full size, two table tops, and poster size displays)
- TRANSCOM- A Transportation Tracking and Communications System (full size)

### **Videotapes**

- Transporting Spent Fuel
- Highway Shipment of Cesium-137
- Safe Passage: The Transport of Spent Nuclear Fuel
- Safety First: Transportation of Radioactive Materials
- The Transportation of Radioactive Materials, Nuclear Regulatory Commission
- TRANSAX 94, Record of Emergency Transportation Exercise

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<sup>23</sup> See <http://www.ntp.doe.gov/infoaval.html> for factsheets available online.

<sup>24</sup> <http://www.ntp.doe.gov/radmat.html>

<sup>25</sup> <http://www.ntp.doe.gov/shipregs.html>

<sup>26</sup> <http://www.ntp.doe.gov/spnucfue.html>

<sup>27</sup> <http://www.rw.doe.gov/pages/resource/facts/transfct.htm>

## Other Materials

- The *Transportation Information Resource Catalogue* (for DOE and contractor personnel) provides an off-the-shelf reference for use in answering questions or concerns about transportation, particularly of radioactive materials. It also has a collection of slides and viewgraphs for use in presentations related to DOE's National Transportation Program.
- The *National Transportation Program Home Page* on the World Wide Web contains detailed information about DOE transportation and links to related sites, including DOE orders and Federal regulations. The address is [www.ntp.doe.gov](http://www.ntp.doe.gov).
- *Campaign-Specific Information Kits* contain packets of transportation-related information customized to meet the informational needs of the audience for a specific.
- *Campaign-Specific Information Kits* contain packets of transportation-related information customized to meet the informational needs of the audience for a specific shipping campaign. In the past such kits have been developed for cesium-137 and spent nuclear fuel shipments.
- *Packaging and Shipping Information* is a 9-inch wheel that contains information on radioactive materials and their shipping requirements. It also lists the types of information found on shipping papers, provides color illustrations of required labels and placards, and gives basic emergency response information.
- The *Transportation Quick Facts Series* is a set of factsheets with very basic information on a variety of transport packaging. The reverse side of each factsheet

contains a schematic of the cask being detailed on the front. The following *Quick Facts*<sup>28</sup> are available: *BMI-1*, *Model-2000 Transport Package*, *IF-300*, *NAC-LWT*, *NLI-1/2*, *TN-8L*, and *TRUPACT II*. New factsheets will be developed as appropriate.

## F. Other Contacts

The *Urban Energy and Transportation Corporation (UETC)*<sup>29</sup> was founded as a non-profit, 501 (c)(3) corporation to address local government concerns on energy and transportation issues. UETC's strategies for fostering community-based involvement include senior federal managers who have decision-making authority, yet are close enough to day-to-day program operations to have specialized technical knowledge of sometimes complex issues. UETC brings these officials into working relationships with state, local, and tribal leaders and other officials that may be affected by federal decisions.

A not-for-profit organization, UETC manages the activities of two external stakeholder groups through a cooperative agreement with DOE:

The *Transportation External Coordination Working Group (TEC/WG)* is a forum for external stakeholders representatives to learn about DOE's transportation activities, identify transportation-related issues of concern to their constituents, suggest ways DOE can address those issues, and review plans for incorporating those suggestions into DOE transportation policies and activities. The

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<sup>28</sup> <http://www.ntp.doe.gov/quick.html>

<sup>29</sup> <http://www.uetc.org/>



TEC/WG focuses on improving DOE's interactions with a variety of organizations interested in radioactive materials transportation and emergency response. Membership includes representatives from national, state, tribal, and local government organizations, industry, and professional groups. Discussions at the TEC/WG focus on transportation operations; emergency management planning, training, and technical assistance; and public information and education.

The *Local Government Network (LGN)* is composed of emergency response and enforcement officials, primarily at the local level, that are concerned with hazardous materials transportation and emergency preparedness issues.

UETC Corporate Headquarters  
Suite 710, VFW Building  
406 West 34th Street  
Kansas City, MO 64111  
(816) 531-5745  
John Burge, President

The ***Conference of Radiation Control Program Directors, Inc. (CRCPD)***<sup>30</sup> is a non-profit organization of approximately 800 members representing governmental radiation regulatory programs. CRCPD produces the Directory of State Agencies Involved with the Transportation of Radioactive Material.

CRCPD  
Office of the Executive Director  
205 Capital Avenue  
Frankfort, KY 40601

(502) 227-4543

Charles Hardin, Executive Director

The ***Commercial Vehicle Safety Alliance (CVSA)***<sup>31</sup> is an organization of Federal, State, and provincial government agencies and representatives from private industry in the United States, Canada, and Mexico dedicated to improvement of commercial vehicle safety. Through its national office, CVSA is called upon to represent motor carrier safety and enforcement issues. CVSA produces a monthly newsletter, videos, brochures, and fact sheets, and conducts training courses.

CVSA  
5430 Grosvenor Lane, Suite 130  
Bethesda, MD 20814  
(301) 564-1623  
William Fiste, Executive Director

The ***Western Governors' Association (WGA)***<sup>32</sup> is an independent, nonpartisan organization of governors representing 18 Western States, two Pacific Territories, and a Commonwealth. WGA serves as a forum through which the governors can provide strong regional leadership on critical issues affecting the west. Activities of WGA include the establishment of the WGA Technical Advisory Group for WIPP Transport to serve as technical advisors to the governors, WGA staff, and DOE. WGA produces a quarterly newsletter and provides training and a speakers' bureau.

WGA  
600 17th Street

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<sup>30</sup> <http://www.crcpd.org/>

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<sup>31</sup> <http://cvsa.org/>

<sup>32</sup> <http://www.westgov.org/>



Suite 1705 South Tower  
Denver, CO 80202  
(303) 623-9378  
James Souby, Executive Director  
Ronald Ross, Program Manager for  
Nuclear & Hazardous Waste, Energy, Transportation

The ***Southern States Energy Board (SSEB)***<sup>33</sup> is a non-profit interstate compact organization that serves as the regional representative on energy and environmental matters for 16 southern States and 2 territories. Two subcommittees of SSEB address transportation related issues the Advisory Committee on Radioactive Materials Transportation, and the Transuranic Waste Transportation Working Group. SSEB has produced handbooks on Transuranic Waste Transportation and Spent Fuel and High-Level Radioactive Waste Transportation.

Southern States Energy Board  
6325 Amherst Court  
Norcross, GA 30092  
(770) 242-7712  
Kenneth J. Nemeth, Executive Director  
Beth Fulmer, Senior Policy Analyst

The ***Council of State Governments*** works to strengthen the effectiveness of State governments and to enhance interstate cooperation among States in a region. Organizations of interest are the Council of State Governments - Midwest Office<sup>34</sup> and the Council of State Governments - Eastern Regional Conference.<sup>35</sup>

Council of State Governments - Midwest Office  
641 E. Butterfield Road, Suite 401  
Lombard, IL 60148-5651  
(630) 810-0210  
Michael McCabe, Executive Director  
Lisa Sattler, Senior Program Manager,  
Midwest High Level Radioactive Waste  
Transportation Project

Council of State Governments  
Eastern Regional Conference  
5 World Trade Center  
Suite 9241  
New York, NY 10048  
(212) 912-0128  
Alan Sokolow, Director

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<sup>33</sup> <http://www.sseb.org>, <http://www.uetc.org/tec/SSEB.htm>

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<sup>34</sup> <http://www.csg.org/regions/midwest/index.html>

<sup>35</sup> <http://www.csgeast.org/>



## **IV. Operational Considerations**

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### **A. Transportation Management**

Transportation management experts can provide a wealth of resources and information to assist in overall management planning activities. The National Transportation Program provides technical assistance for operations and systems support for transportation activities through its offices in Albuquerque and Idaho respectively. NTP-Headquarters assists with policy and regulatory requirements. Field operations offices are staffed with traffic or transportation managers who supply valuable information and should be a part of any management team when a mission is transmitted to the field for implementation. Contractor transportation management staff are also available and provide valuable support in successful transportation program planning.

### **B. Applicable Regulations and Requirements**

Applicable rules and regulations for transportation planning include U.S. Department of Transportation (DOT) and Nuclear Regulatory Commission (NRC) statutes and regulations; other Federal, State, Tribal, and local rules and regulations; and numerous DOE orders, policies, and procedures. The transportation expert on the management team must determine the applicability of the rules, regulations, and orders that govern the particular transportation mission.

### **C. Planning Considerations**

When it becomes necessary to develop a transportation plan, logistics staff can provide guidance to the program manager and the management team. The primary thrust of the transportation plan should be operational (i.e., the handling, packaging, and transport of the commodity through a system of sequential steps resulting in safe, economical, efficient, and secure transportation of the specific commodity to a destination). The plan should contain DOE organizational responsibilities (Headquarters, field, and site), responsibilities of any other participants (other Federal agencies or State, Tribal, or local governments), other stakeholder considerations, and carrier responsibilities. The plan should also include shipment schedules (except for safeguarded materials), route maps, emergency plans and contacts, communication strategies, any above-regulatory agreements that will be followed over the course of the shipping campaign, package recovery plans, and packaging information.

Operational processes include considerations of potential product characterization, packaging, modes, and routes, which in turn affect other decisions that need to be made, such as carrier selection, freight rate, and service negotiations. The process involves negotiating a freight rate and establishing minimum service levels, depending on commodity, number of shipments, transportation schedule, or specialized equipment or driver requirements that may increase or affect the base transportation cost.

The NTP can provide program managers with freight rate negotiations on both less-than-truckload (LTL) and truckload (TL) shipments and campaigns. DOE has negotiated Section 13712 Tenders with major transcontinental and regional LTL and TL motor carriers. Exemptions are also filed with DOT by NTP on behalf of Departmental programs. Records of existing exemptions are found on the NTP World Wide Web Home Page.<sup>36</sup>

Evaluations of motor carriers are performed through the Motor Carrier Evaluation Program (MCEP). MCEP is designed to evaluate a carrier's level of regulatory compliance and determine how aggressive the carrier is in regulatory driven areas of operational efficiency, emergency preparedness, liability coverage, and safety. The MCEP is available from Headquarters for field and site levels of implementation.

## D. Operational Resources

**Training and Development.** The Transportation Training Program, provided for DOE and DOE contractor employees, consists of basic and advanced courses on applicable Federal regulations and procedures for handling and transporting hazardous (including radioactive) materials and hazardous wastes. Courses are being offered at locations throughout the DOE complex as well as on CD-ROM, providing self-paced learning.

Courses vary from year to year but generally have included:

- Advanced Hazardous Materials Packaging Workshop
- Advanced Hazardous Waste Transportation
- Advanced Radioactive Materials Transportation
- DOT Hazardous Materials Regulations Under HM-181/HM-215A/HM215B<sup>37</sup>
- DOE Regulations on the Classification, Packaging and Transportation of Explosives
- DOE/EPA Regulation of the Transportation of Hazardous Wastes and Substances
- Hazardous Materials Modular Training
- IATA/ICAO Dangerous Goods Transportation
- Instructor Orientation to the Motor Carrier Safety Modular Training Program
- International Maritime Dangerous Goods Code
- Introduction to the FMCSR/Vehicle Inspection
- Quality Assurance for Radioactive Material Packaging
- Transportation Compliance Inspectors Workshop
- Transportation of Infectious Substances and Diagnostic Specimens

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<sup>36</sup> <http://www.ntp.doe.gov/>

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<sup>37</sup> <http://hazmat.dot.gov/rules/hm215.htm>

Current course listings and availability may be found on the NTP Home Page<sup>38</sup> or by contacting the HAMMER Training and Education Center in Richland, Washington, at (509) 372-3143.<sup>39</sup>

***Transportation Operations Manual (TOM).*** This manual provides guidance to DOE transportation and logistics personnel for accomplishing transportation operations and traffic management activities and ensures that transportation and logistics personnel recognize the requirements for achieving safe, efficient, and cost-effective transportation. The manual emphasizes Federal regulations such as those of the Department of Transportation and DOE transportation policies, which are set forth in DOE Orders. The manual is a resource document with emphasis on professionalism, uniformity, public interaction, and regulatory compliance to foster safe, cost-effective, quality operations.

***Packaging and Transportation Safety Implementation Guide.*** This document contains information concerning use of current principles and practices, including regulatory guidance from DOT and NRC, where available, to establish and implement packaging and transportation safety programs in accordance with DOE Order 460.1A. The Guide is available along with other transportation planning resources on the World Wide Web.<sup>40</sup>

***Technical Assistance Resources.*** NTP has assessment teams that can evaluate field element and contractor transportation

performance, including a level of assistance to bring any non-compliance issue into regulatory compliance. Program support includes regulatory analysis, assessment of program impacts, operations management, regulatory clarification and implementation, and transport-related litigation. Also included is oversight of the manufacture and maintenance of sufficient packaging inventories to support program goals and schedules, and support for approval (certification/recertification) of packaging within the DOE system.

## **E. Automation and Systems Support**

The ***Transportation Information Network (TIN)*** is the overall system for accessing automation programs, communications systems, and research/analysis computer-codes. Dial-up access to selected programs is available through a compilation of risk, systems analysis, routing, cost models, and related data pertaining to radioactive materials transportation called TRANSNET.

Accessible programs for communication, risk analysis, and research include the following:

***RADTRAN IV.0 Risk Assessment Model.*** The RADTRAN IV.0 risk analysis code accepts user-supplied input with health physics data to calculate expected radiological risks and consequences resulting from radioactive materials transportation. This information can be used in meeting transportation related NEPA requirements.<sup>41</sup>

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<sup>38</sup> <http://www.ntp.doe.gov/>

<sup>39</sup> <http://www.hammertraining.com/>

<sup>40</sup> [http://www.ornl.gov/pats/pats\\_f.htm](http://www.ornl.gov/pats/pats_f.htm)

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<sup>41</sup> <http://ttd.sandia.gov/Radtran/radtran.html>

*TRANSCOM (Transportation Tracking and Communications System).* The TRANSCOM system combines satellite communications, computerized database management, user networks, and ground communications to follow the progress of shipments of radioactive materials. The primary objective of TRANSCOM is to provide a central monitoring and communications center for DOE shipments of spent fuel, high-level waste, and other high visibility shipping campaigns.<sup>42</sup>

*INTERLINE Routing Model.* INTERLINE is an interactive computer program that finds likely routes for shipments over the U.S. railroad system and waterways. It uses a shortest-path algorithm that has been modified to reflect the nature of railroad, barge, and shipping company operations and to accommodate a large transportation network.<sup>43</sup>

*HIGHWAY Routing Model.* The HIGHWAY routing model was established to determine highway transportation routes and population densities along those routes. This model allows for the choice of commercial, quickest, and shortest route, and is based on a proprietary comprehensive highway network under license from Rand McNally Corporation.<sup>44</sup>

*RMIR (Radioactive Materials Incident Reporting Database).* The Radioactive Materials Incident Reporting database contains information on transportation-related accidents and incidents involving radioactive materials from 1971 to the present. RMIR is continually updated with new incidents and additions to existing records.<sup>45</sup>

*ETAS (Enterprise Transportation Analysis System).*<sup>46</sup> The ETAS database provides centralized collection, validation, analysis, and reporting of transportation data for shipments made by and on behalf of DOE. The automated system allows current information to be retrieved and provides an assortment of querying capabilities. ETAS also serves as a program management tool for DOE, facilitating coordination across several contractors and sites. Transportation managers can use the database for transportation cost analyses, rate evaluation, carrier evaluation, packaging utilization, and for preparing traffic activity reports required under DOE Order 460.2. ETAS also has a Prospective Shipment Module (PSM) that forecasts shipments for a year.<sup>47</sup>

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<sup>42</sup> <http://www.ornl.gov/ttg/transcom.htm>

<sup>43</sup> <http://www.em.doe.gov/trans/move9-6.html>

<sup>44</sup> <http://www.em.doe.gov/trans/move9-6.html>

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<sup>45</sup> <http://www.sandia.gov/ttp/trnsauto.htm> - rmir

<sup>46</sup> Formerly called SMAC. See <http://www.em.doe.gov/trans/smac.html>.

<sup>47</sup> <http://www.ntp.doe.gov/psmhome.html>

## V. Emergency Planning Considerations

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Hazardous material accidents and releases, while unlikely, do occur. State and local governments are responsible for emergency management and response programs. These programs must be capable of managing all hazards ranging from natural disasters to hazardous materials incidents on a day-to-day basis. To ensure that procedures and resources are in place in the event of a shipping incident, DOE Transportation Emergency Preparedness Program (TEPP)<sup>48</sup> Coordinators work with State, Tribal and local governments to determine current readiness and capabilities (planning and training) for response to an incident. This process identifies areas for improvement and helps TEPP to address concerns about emergency preparedness for DOE radioactive material (RAM) shipments. Program managers, transportation managers, and public information managers should work with their TEPP and emergency management coordinators to identify and address emergency preparedness requirements in the early stages of transportation planning. DOE has a variety of emergency response resources and maintains a comprehensive emergency management system.

The public and key stakeholders, especially in the emergency response community, are concerned about DOE shipments of radioactive and other hazardous materials. Stakeholders must be assured that local emergency response capability is adequate and that competent, well-planned federal assistance is available if needed. The TEPP Coordinators work with emergency responders at all levels of government to provide planning and

training assistance. This assistance enables jurisdictions to strengthen their programs and to enhance their existing response system. Emergency preparedness experts are critical team members because of the planning and training resource assistance they can provide to State, Tribal, and local public safety officials.

### A. Offsite Emergency Response Roles and Responsibilities

A variety of parties have roles and responsibilities related to transportation emergencies involving radioactive or other hazardous materials.

#### *Civil Law Enforcement and Emergency Services Personnel.*

Local government or, where available, Tribal government personnel normally provide first response and incident command for an offsite transportation incident. Many first responders, particularly volunteers, possess minimal knowledge of radioactive materials and are not usually certified under 29 CFR 1910.120<sup>49</sup> to work in a hazardous materials environment.

Although many local jurisdictions have special hazardous materials response units, most will rely on State or Federal technical assistance during radiological incidents.

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<sup>48</sup> <http://www.hanford.gov/doe/tmp/tranmap2.htm>

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<sup>49</sup> [http://www.osha-slc.gov/OshStd\\_data/1910\\_0120.html](http://www.osha-slc.gov/OshStd_data/1910_0120.html)

**State and Tribal Government Officials.** State and Tribal governments have primary responsibility for the health and welfare of their citizens and therefore have a legitimate interest in ensuring the safety of hazardous materials shipments within their boundaries, including DOE-owned materials. Some States maintain specialized teams capable of responding to radioactive materials incidents in support of local authorities. Few Tribes possess capabilities beyond that of first responders and may request additional assistance of DOE.

**Carriers.** Carriers are required to provide emergency planning, emergency response assistance, liability coverage, and site cleanup/restoration. It is DOE's policy to respond with appropriate information or resources to requests from DOE carriers for technical advice or assistance.

**DOE as a Federal Agency.** As the lead Federal agency for offsite radiological monitoring and assessment, DOE maintains the Radiological Assistance Program (RAP). RAP resources include specialized staff and equipment on call twenty-four hours a day at eight Regional Coordinating Offices. RAP resources are deployed in measured response to requests for technical advice or assistance from other Federal agencies, States, Tribes, or local governments.

**DOE as a Shipper.** Like private-sector shippers, DOE must provide emergency response information required on shipping papers, including a twenty-four hour emergency telephone number. Shippers have overall responsibility for providing adequate technical assistance for emergency response should the carrier fail to do so. RAP teams respond on request unless a prior agreement is in place with States through which a

shipment passes. DOE Order 232.1 requires notification and reporting of certain transportation incidents involving DOE cargo.<sup>50</sup>

## **B. DOE Site Emergency Management Planning**

TEPP, coordinated by the Office of Environmental Management, the Office of Emergency Management (NN-60), and other appropriate DOE elements and program offices, is part of the Department-wide Emergency Management System. TEPP is managed in the field on a regional basis in a manner similar to the Radiological Assistance Program (RAP) and the RAP Regional Coordinating Offices (RCO). TEPP Coordinator positions are designated to correspond with the eight RCO Regional Response Coordinator (RRC) positions. At all other DOE site/facilities with transportation responsibilities, a TEPP Point of Contact (POC) is identified, reporting to the Regional TEPP Coordinator.

The DOE line organization responsible for hazardous materials is also responsible for notifying the DOE emergency management structure and TEPP Coordinator of its intention to ship and assisting with coordination of site emergency management activities.

Each DOE site determines how best to incorporate its offsite transportation activities into the site emergency planning. Some sites address TEPP in a chapter, annex, or appendix to their site emergency response plan, while others maintain an emergency plan for transportation emergency preparedness activities. Not

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<sup>50</sup> <http://www.explorer.doe.gov:1776/pdfs/newordtext/232/o2321a.pdf>



all DOE sites have integrated transportation emergency planning into their Emergency Management System (EMS) plans and procedures.

The TEPP coordinates DOE-wide transportation emergency planning and preparedness activities for non-weapons-related radioactive materials shipment. The program is implemented through field TEPP Coordinators and in conjunction with site emergency preparedness coordinators. The TEPP Coordinators are responsible for the daily management of all TEPP activities within their respective regions. Among other activities, TEPP coordinators should (1) work with program, transportation, and public information managers to incorporate emergency preparedness considerations into the overall transportation program plan; (2) conduct needs assessments with jurisdictions to determine current readiness and capabilities (planning and training); (3) provide emergency management planning and training assistance to strengthen preparedness and response capabilities; (4) support emergency responders at all levels of government; (5) review the carrier's emergency response plans; (6) assist public participation and public affairs personnel in coordinating emergency management information with stakeholders along the transportation route; (7) coordinate site transportation emergency planning and response activities with other DOE, State, Tribal, and local emergency preparedness programs in preparation for the ensuing shipments; and (8) coordinate with stakeholder emergency organizations.

Regional Coordinating Offices (RCOs) can assist program managers and TEPP Coordinators with planning for emergency response assistance within their specific RCO regions.

The primary DOE response groups that would assist at a transportation incident are the Radiological Assistance Program teams that operate from eight strategically located DOE Regional Coordinating Offices around the country. Upon State, Tribal or local jurisdiction request, these teams provide technical expertise and assistance to monitor and assess radiological hazards.

Advance planning for transportation emergency response will be most effective if it is undertaken as a cooperative effort among transportation managers, public information managers, and emergency preparedness TEPP coordinators. If a site does not have an active TEPP effort, or a TEPP Coordinator, the intended shipping campaign could serve as a catalyst for developing one. The operations office or Headquarters personnel can provide assistance to the site program manager in initiating the implementation of a TEPP effort.

### **C. Emergency Management Requirements**

Emergency Response requirements are found in 49 CFR 172.600<sup>51</sup>, which requires minimum emergency response information on shipping papers to be used in mitigating an incident involving hazardous materials, and in 49 CFR 172.700, which prescribes training requirements for hazardous materials employees. Departmental orders and directives that govern DOE emergency management activities include the following:

DOE Order 151.1, Comprehensive EMS<sup>52</sup>

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<sup>51</sup> <http://frwebgate.access.gpo.gov/cgi-bin/get-cfr.cgi>

<sup>52</sup> <http://www.explorer.doe.gov:1776/pdfs/newordtext/151/o1511c2.pdf>

DOE 232.1, Occurrence Reporting and Processing of Operations Information<sup>53</sup>

DOE Order 5530.3, Radiological Assistance Program (RAP)<sup>54</sup>

DOE Order 460.2, Departmental Materials Transportation and Packaging Management<sup>55</sup>

## D. Available Resources

### Planning

The following documents (“TEPP tools”) have been developed to assist emergency preparedness planning activities along transportation corridors. These tools provide a technical approach for program development and a standardized approach to transportation emergency preparedness planning.

*Contact Guide.* This Guide sets forth a step-by-step transportation planning and coordination process for DOE Operations Office personnel to use for routine and non-routine hazardous material shipments. The Guide identifies how to work with State and local authorities to do a response self-assessment and provides guidance on the use of TEPP products.

*Regional Contact Directory.* A listing of Federal, State, Tribal, local, and private organization and agencies involved in transportation planning, this DOE complex-wide contact

directory is a compilation of several Federal, State and private industry directories.

*State and Local Model Plans.* These are emergency management plan models for use by State and local jurisdictions.

*Incident Command System Model Procedure.* This is a model response procedure for use by local jurisdictions and their fire service responders.

*DOE Operations Office Model TEPP Plans and Procedures.* These are emergency management model plans and associated procedures for use in transportation emergency preparedness planning.

*Tabletop, Drill, Exercise Manual.* A two-volume set containing basic tools for State, Tribal, and local responders to define and perform transportation response activities, this manual provides a guidance procedure, associated “How to” checklists, and seven response scenarios.

### Training

DOE’s Transportation Emergency Preparedness Program (TEPP) assists in ensuring that Federal, Tribal, State and local responders have access to the plans, training, and technical assistance necessary to safely, efficiently, and effectively respond to transportation accidents involving DOE unclassified radioactive materials. One of the objectives of TEPP is to provide training to the jurisdictions affected by DOE radioactive materials shipments. This training is flexible, allowing the jurisdictions to augment their existing emergency preparedness training programs; is readily accessible; and is designed to

<sup>53</sup> <http://www.explorer.doe.gov:1776/pdfs/newordtext/232/o2321a.pdf>

<sup>54</sup> <http://www.explorer.doe.gov:1776/pdfs/oldordtext/5530.3/55303.pdf>

<sup>55</sup> <http://www.explorer.doe.gov:1777/pdfs/newordtext/460/o4602cl.pdf>

facilitate delivery of quality, low-cost training materials. Materials will be easy to use and address the functions performed by emergency responders to safely respond to accidents involving DOE unclassified RAM shipments. The development of these training materials is being coordinated with input from subject matter experts representing State and local governments, firefighters, law enforcement, and other Federal agencies.

The DOE Richland Operations Office, through its Volpentest HAMMER Training and Education Center, has the lead responsibility for developing the training materials. The development phase began in Fiscal Year 1998 and will continue through Fiscal Year 1999. Some of the topics addressed in the training materials include Radiological Orientation, Radiological Dosimetry, Instrumentation and Monitoring, Response Actions to a Radiological Incident, Contamination Control, and Patient Handling. These training materials will comprise the base program that is to be implemented by the State, Tribal, and local jurisdictions through their existing training programs.

The DOE will continue to provide additional training specific to types of commodities shipped. This training will augment the base program and be administered through the program office responsible for the shipping campaign.

For additional information on the TEPP training program, please contact RL/HAMMER at (509) 376-6722 or the Office of Environmental Management, DOE Headquarters at (301) 903-7284.<sup>56</sup>

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<sup>56</sup> See also <http://www.hanford.gov/pss/t&p/ntp-train.htm>.

## Guidance Documents and Other Materials

*DOE Emergency Management Guides (EMGs).* Describes procedures for implementing planning requirements of DOE Order 151.1. Relevant EMGs include Transportation Emergency Preparedness Program, Event Classification and Emergency Action Levels; Public Information; Offsite Interactions; and Standard Format and Content for Emergency Plans.

*U.S. DOT North American Emergency Response Guidebook (ERG).*<sup>57</sup> The 1996 North American Emergency Response Guidebook (NAERG96) was developed jointly by Transport Canada (TC), the U.S. Department of Transportation (DOT), and the Secretariat of Communication and Transportation of Mexico (SCT). The primary purpose of this Guide is to aid first responders in quickly identifying the specific or generic hazards of the material(s) involved in the incident. A photocopy of the appropriate ERG Guide provided with the shipping papers can assist responders in making initial decisions. An additional information source is Material Safety Data Sheets to be attached to shipping papers.

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<sup>57</sup> <http://hazmat.dot.gov/gydebook.htm>

*Federal Radiological Emergency Response Plan (FRERP)—Operational Plan.*<sup>58</sup> Provides an overview of the Federal emergency response program and describes responsibilities of participating agencies.

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<sup>58</sup> <http://www.nrc.gov/NRC/AEOD/ER/FRERP/frerp.html>

## VI. For More Information

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A joint DOE Headquarters, Albuquerque Operations Office, and Idaho Operations Office team manage the DOE National Transportation Program (NTP). Traffic managers at field offices throughout the complex work with the NTP to resolve site- and complex-wide transportation issues. The Program can assist other DOE programs in the following areas:

- Communications
- Computing Systems and Development
- Emergency Preparedness
- Institutional Relations
- Packaging Development
- Regulatory Compliance and Safety
- Transportation and Packaging Operations

For further information about NTP programs and services, please contact the following:

Kelvin Kelkenberg, Office Director, NTP-Headquarters,  
(301) 903-8113 (Policy, Emergency Management)

Mona Williams, Office Director, NTP-Albuquerque  
(505) 845-5405 (Operations, including Communications,  
Institutional Programs, Packaging Development, and  
Compliance and Safety).

Frank Holmes, Program Director, NTP-Idaho  
(208) 526-3599 (Systems Engineering)



## VII. Potential Components of a Transportation Plan

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Note: Because many programmatic and institutional considerations for planning shipping campaigns are unique to each campaign, no two transportation plans will be exactly alike in approach and content. The listing below provides suggestions for generic components that a transportation plan might have. Elements should be added or deleted as circumstances dictate.

### **Background**

- Purpose of the Shipping Campaign
- Material to Be Shipped and Packaging Descriptions
- Documentation
- Marking, Labeling, and Placarding
- Material Handling
- Transport Mode and Routing Rationale
- Carrier Selection
- Safety Assurance and Above-Regulatory Activities

### **Campaign Management Team and Roles and Responsibilities**

- DOE and Other Federal Programs
- Affected Jurisdictions
- Carriers
- Other Interested Stakeholders

### **Consignment and Shipment Schedule and Route Map**

### **Communications**

- Networking the Team
- Advance Information
- Shipment Tracking
- Delivery Verification and Feedback

### **Public Information Plan**

- Audience Analysis
- Key Messages
- Channels for Communication
- Communication Activities
- Evaluation

### **Training Plan**

- Audience Analysis and Requirements
- Options
- Schedule
- Quality Assurance

### **Security Plan**

### **Emergency Response Plan**

### **Regulatory References**

### **Information Resources**

- Fact Sheets
- World Wide Web Sites
- Contact Information
- Training Descriptions and Schedules
- Glossary of Terms and Acronyms





## VIII. Transportation Planning Matrix

The matrix below provides a framework for completing tasks that make up the transportation activity. Two elements of the matrix are unchanging: (1) Regulatory compliance is always the first priority and (2) quality management is conducted in all operations. DOE Order 5700.6C established crosscutting DOE policy for senior management responsibility to ensure the Quality Assurance Program covers the work of all DOE elements and Management and Operations (M&O) and Management and Integration (M&I) contractors (with limited exceptions). Operational functions are arranged from left to right in probable order of execution (from advanced planning to delivery verifications). The numbers in the columns suggest a sequence of coordination functions for operational functions. Some functions may be performed simultaneously. These suggestions are designed to maximize public involvement and related time and cost savings throughout a shipping campaign. Subsequent pages provide lists of relevant regulations, orders, and guidance in the suggested order of coordination functions.

**Transportation Planning Matrix**

	<b>Operational Functions</b>											
<b>Coordination Functions</b>	Advance Planning Process	Material Characterization	Transport Mode Selection	Package Selection	Documentation	Marking, Labeling, Placarding	Material Handling	Carrier Selection	Routing Decisions	Consignment Scheduling	Shipment Tracking	Delivery Verification and Feedback
Regulatory Compliance	1	1	1	1	1	1	1	1	1	1	1	1
Public Participation and Information	3	3	3						2	2	3	3
Technical Assistance	2								4	4	5	2
Emergency Preparedness	4	2	2	3	3	3	3	2	3	3	2	
Advance Shipment Information	5								5	5	4	
Operational Training				2	2	2	2					
←----- <b>Quality Management Performed throughout Operations (DOE 5700.6C)</b> -----→												



## Transportation Planning Matrix

	Operational Functions											
Coordination Functions	Advance Planning Process	Material Characterization	Transport Mode Selection	Package Selection	Documentation	Marking, Labeling, Placarding	Material Handling	Carrier Selection	Routing Decisions	Consignment Scheduling	Shipment Tracking	Delivery Verification and Feedback
Regulatory Compliance	1	1	1	1	1	1	1	1	1	1	1	1
Public Participation and Information	3	3	3						2	2	3	3
Technical Assistance	2								4	4	5	2
Emergency Preparedness	4	2	2	3	3	3	3	2	3	3	2	
Advance Shipment Information	5								5	5	4	
Operational Training				2	2	2	2					
←-----Quality Management Performed throughout Operations (DOE 5700.6C)-----→												

## Advance Planning Process

### 1. Regulatory Compliance

10 CFR 1021	NEPA Guidelines outline the steps to be followed by DOE.	CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986.
40 CFR 1500-08	Contains the Council on Environmental Quality Implementing Regulations.		
DOE 451.1A	Establishes a DOE Policy to comply with NEPA requirements early in planning process.	RCRA	Resource Conservation and Recovery Act of 1976, as amended by the Hazardous and Solid Waste Amendments of 1984.
SEN-15-90	States Secretary of Energy policies and mandates a NEPA Compliance Officer for each operations office.		

## 2. Technical Assistance

49 USC 5116	Provides information on technical assistance involving DOT planning and training grants.
NWPA Part 180(c)	Nuclear Waste Policy Act requires DOE to provide assistance for training of State, local, and Tribal personnel affected by spent commercial fuel transportation.
WIPP	Waste Isolation Pilot Plant allows DOE to purchase equipment for States as part of technical assistance.
WLWA 1992	WIPP Land Withdrawal Act allows DOE to provide funds for training and to enter into agreements with States and Tribes to provide monetary or in-kind assistance in acquiring equipment.
Section III of this Guide	Provides information on how to identify and coordinate technical assistance efforts.

## 3. Public Participation and Information

NEPA	National Environmental Policy Act of 1969.
AIRFA	American Indian Religious Freedom Act Addresses public involvement at Tribal sites.
DOE Public Involvement	Specifies the need to involve the public in matters pertaining to activities such as

Policy	transportation.
DOE American Indian Policy	Provides general guidance to DOE personnel for management actions affecting Tribes. Emphasizes implementation of such activities in a knowledgeable and sensitive manner.
DOE Environmental Justice Strategy for Executive Order 12898	Promotes a “Partnership in Participation” approach with stakeholders including the general public, affected communities, Federal, Tribal, State, and local governments in the early stages of planning and implementing environmental justice procedures.
Section III of this Guide	Describes context in which DOE decisions are made: (1) Identify and interact with stakeholders. (2) Public affairs specialists interact with media sources, respond to information requests, and facilitate public forums.
Section IV of this Guide	Outlines stakeholder involvement considerations.

#### **4. Emergency Preparedness**

Section VI of this Guide Describes the transportation emergency preparedness program and its role as a primary component in public participation; stakeholder interaction; State, Tribal, and local government emergency management; and DOE transportation planning.

#### **5. Advance Shipment Information**

Section IIIA of this Guide Outlines requirements of "shipper of record" to ensure compliance with applicable laws, including notification.



## Transportation Planning Matrix

	Operational Functions											
Coordination Functions	Advance Planning Process	Material Characterization	Transport Mode Selection	Package Selection	Documentation	Marking, Labeling, Placarding	Material Handling	Carrier Selection	Routing Decisions	Consignment Scheduling	Shipment Tracking	Delivery Verification and Feedback
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Technical Assistance	2								4	4	5	2
Emergency Preparedness	4	2	2	3	3	3	3	2	3	3	2	
Advance Shipment Information	5								5	5	4	
Operational Training				2	2	2	2					
←-----Quality Management Performed throughout Operations (DOE 5700.6C)-----→												

## Material Characterization

### 1. Regulatory Compliance

10 CFR 71.4	Includes definitions of various materials and subsets.	49 CFR 171	Provides general information and definitions.
10 CFR 73.2	Includes definitions of various material and subsets.	49 CFR 172	Lists and assigns classifications for hazardous materials. Contains the Hazardous Materials Table and Appendices.
10 CFR 73.6	Includes exemptions for certain materials.		
40 CFR 261	Identifies those solid wastes to be managed as Hazardous Wastes, and exclusions. Discusses characteristics and properties of ignitability, corrosiveness, reactivity, or toxicity.	49 CFR 173.22	Defines shipper responsibility for hazardous materials classification.

DOE 460.2	Requires proper commodity description as a primary factor in establishing rates and charges.	Congressionally mandated requirements	Apply to specific sites such as the Waste Isolation Pilot Plant (WIPP).
DOE C460.2	Covers contractor requirements for compliance with DOE Order 460.2.	DOE Public Involvement Policy	Specifies the need to involve the public in matters pertaining to activities such as transportation.
<b>2. Emergency Preparedness</b>		DOE American Indian Policy	Provides general guidance to DOE personnel for management actions affecting Tribes. Emphasizes implementation of such activities in a knowledgeable and sensitive manner.
49 CFR 172	Contains emergency response information for shipping papers (Subpart G) and hazardous materials employee training requirements (Subpart H).	DOE Environmental Justice Strategy for Executive Order 12898	Promotes a “Partnership in Participation” approach with stakeholders including the general public, affected communities, Federal, Tribal, State, and local governments in the early stages of planning and implementing environmental justice procedures.
DOE 151.1	Establishes policies and procedures for emergency management activities.		
RCRA	Resource Conservation and Recovery Act of 1976, as amended by the Hazardous and Solid Waste Amendments of 1984.		
<b>3. Public Participation and Information</b>		Section III of this Guide	Describes context in which DOE decisions are made: (1) Identify and interact with stakeholders. (2) Public affairs specialists interact with media sources, respond to information requests, and facilitate public forums.
NEPA	National Environmental Policy Act of 1969.	Section IV of this Guide	Outlines stakeholder involvement considerations.
AIRFA	American Indian Religious Freedom Act Addresses public involvement at Tribal sites.		



## Transportation Planning Matrix

	Operational Functions											
Coordination Functions	Advance Planning Process	Material Characterization	Transport Mode Selection	Package Selection	Documentation	Marking, Labeling, Placarding	Material Handling	Carrier Selection	Routing Decisions	Consignment Scheduling	Shipment Tracking	Delivery Verification and Feedback
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Emergency Preparedness	4	2	2	3	3	3	3	2	3	3	2	
Advance Shipment Information	5								5	5	4	
Operational Training					2	2	2	2				
←-----Quality Management Performed throughout Operations (DOE 5700.6C)-----→												

## Transport Mode Selection

### 1. Regulatory Compliance

- 49 CFR 172.101 Hazardous Material Table contains modal citation.
- 49 CFR 174-177 Contains shipping regulations based upon mode of carriage -- i.e., rail, air, water, and highway.

### 2. Emergency Preparedness

- 49 CFR 172.600, Subpart G Provides emergency response requirements and information.
- CERCLA Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Acts of 1986.

RCRA	Resource Conservation and Recovery Act of 1976, as amended by the Hazardous and Solid Waste Amendments of 1984.
49 CFR 172.700, Subpart H	Contains hazardous materials employee training requirements.
DOE 151.1	Establishes policies and procedures for emergency management activities.

### 3. Public Participation and Information

NEPA	National Environmental Policy Act of 1969.
AIRFA	American Indian Religious Freedom Act Addresses public involvement at Tribal sites.
Congressionally mandated requirements	Apply to specific sites such as the Waste Isolation Pilot Plant (WIPP).
DOE Public Involvement Policy	Specifies the need to involve the public in matters pertaining to activities such as transportation.
DOE American Indian Policy	Provides general guidance to DOE personnel for management actions affecting Tribes. Emphasizes implementation of such activities in a knowledgeable and sensitive manner.

DOE Environmental Justice Strategy for Executive Order 12898	Promotes a “Partnership in Participation” approach with stakeholders including the general public, affected communities, Federal, Tribal, State, and local governments in the early stages of planning and implementing environmental justice procedures.
Section III of this Guide	Describes context in which DOE decisions are made: (1) Identify and interact with stakeholders. (2) Public affairs specialists interact with media sources, respond to information requests, and facilitate public forums.
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## Transportation Planning Matrix

	Operational Functions											
Coordination Functions	Advance Planning Process	Material Characterization	Transport Mode Selection	Package Selection	Documentation	Marking, Labeling, Placarding	Material Handling	Carrier Selection	Routing Decisions	Consignment Scheduling	Shipment Tracking	Delivery Verification and Feedback
Regulatory Compliance	1	1	1	1	1	1	1	1	1	1	1	1
Public Participation and Information	3	3	3						2	2	3	3
Technical Assistance	2								4	4	5	2
Advance Shipment Information	5								5	5	4	
Operational Training				2	2	2	2					
←-----Quality Management Performed throughout Operations (DOE 5700.6C)-----→												

## Package Selection

### 49 Regulatory Compliance

10 CFR 71, Subpart E	Contains NRC requirements for approved Type B packages for shipments of radioactive materials	DOT HM-169A	Is the final rule in which additional requirements for radioactive materials packaging are being considered to conform to international standards.
49 CFR 173, Subpart I	Contains DOT performance based packaging requirements for hazardous and radioactive materials.	DOE 460.1	Establishes the administrative procedures of DOE for certification and use of radioactive and other hazardous materials packaging.

## 2. Operational Training

49 CFR 172.700, Subpart H	Contains hazardous materials employee training requirements.
DOE 151.1	Establishes policies and procedures for emergency management activities.
49 CFR 172.700, Subpart H	Contains training requirements for hazardous materials employees covering general awareness, function specific, and safety areas.
29 CFR 1910.120	Covers emergency response training under the OSHA mandate.
10 CFR 73, Appendix D	Provides training related requirements for material handling.

DOE 5632.1C	Provides training related requirements for material handling.
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## 3. Emergency Preparedness

49 CFR 172, Subpart G	Provides emergency response information for shipping papers.
49 CFR 172, Subpart G	Contains emergency response requirements.
DOE 151.1	Establishes policies and procedures for emergency management activities.

## Transportation Planning Matrix

	Operational Functions											
Coordination Functions	Advance Planning Process	Material Characterization	Transport Mode Selection	Package Selection	Documentation	Marking, Labeling, Placarding	Material Handling	Carrier Selection	Routing Decisions	Consignment Scheduling	Shipment Tracking	Delivery Verification and Feedback
Regulatory Compliance	1	1	1	1	1	1	1	1	1	1	1	1
Public Participation and Information	3	3	3						2	2	3	3
Technical Assistance	2								4	4	5	2
Emergency Preparedness	4	2	2	3	3	3	3	2	3	3	2	
Advance Shipment Information	5								5	5	4	
Operational Training				2	2	2	2					
←-----Quality Management Performed throughout Operations (DOE 5700.6C)-----→												

## Documentation (Shipping Papers)

### 1. Regulatory Compliance

- 10 CFR 20.2006 Mandates the use of a Uniform Hazardous Waste Manifest by generator licensee.
- 40 CFR 262 Mandates the use and form of the Uniform Hazardous Waste Manifest.
- 49 CFR 172, Subpart C Contains requirements for proper entries and sequence on the shipping papers and use of the waste manifest.

### 2. Operational Training

- 49 CFR 172.700, Subpart H Contains training requirements for hazardous materials employees covering general awareness, function specific, and safety areas.
- 29 CFR 1910.120 Covers emergency response training under the OSHA mandate.
- 10 CFR 73, Appendix D Provides training related requirements for material handling.

DOE 5632.1C      Provides training related requirements  
for material handling.

### **3. Emergency Preparedness**

49 CFR 172,  
Subpart G      Provides emergency response  
information on shipping papers.

49 CFR 172,  
Subpart H      Contains hazardous materials  
employee training requirements.

DOE 151.1      Establishes policies and procedures  
for emergency management activities.

## Transportation Planning Matrix

	Operational Functions											
Coordination Functions	Advance Planning Process	Material Characterization	Transport Mode Selection	Package Selection	Documentation	Marking, Labeling, Placarding	Material Handling	Carrier Selection	Routing Decisions	Consignment Scheduling	Shipment Tracking	Delivery Verification and Feedback
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Public Participation and Information	3	3	3						2	2	3	3
Technical Assistance	2								4	4	5	2
Emergency Preparedness	4	2	2	3	3	3	3	2	3	3	2	
Advance Shipment Information	5								5	5	4	
Operational Training				2	2	2	2					
←-----Quality Management Performed throughout Operations (DOE 5700.6C)-----→												

## Marking, Labeling, and Placarding

### 1. Regulatory Compliance

49 CFR 172, Subparts D, E & F      Contain marking, labeling, and placarding respectively, and describe the shipper and carrier responsibilities.

### 2. Operational Training

49 CFR 172, Subpart H      Contains training requirements for hazardous materials employees covering general awareness, function specific, and safety areas.

29 CFR 1910.120      Covers emergency response training under the OSHA mandate.

10 CFR 73, Appendix D      Provides training related requirements for material handling.

DOE 5632.1C      Provides training related requirements

for material handling.

### **3. Emergency Preparedness**

49 CFR 172, Subpart G	Provides emergency response information on shipping papers.
49 CFR 172, Subpart H	Contains hazardous materials employee training requirements.
DOE 151.1	Establishes policies and procedure for emergency management activities.



## Transportation Planning Matrix

	Operational Functions											
Coordination Functions	Advance Planning Process	Material Characterization	Transport Mode Selection	Package Selection	Documentation	Marking, Labeling, Placarding	Material Handling	Carrier Selection	Routing Decisions	Consignment Scheduling	Shipment Tracking	Delivery Verification and Feedback
Regulatory Compliance	1	1	1	1	1	1	1	1	1	1	1	1
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Technical Assistance	2								4	4	5	2
Emergency Preparedness	4	2	2	3	3	3	3	2	3	3	2	
Advance Shipment Information	5								5	5	4	
Operational Training				2	2	2	2					
←-----Quality Management Performed throughout Operations (DOE 5700.6C)-----→												

## Material Handling

### 1. Regulatory Compliance

29 CFR  
1910.120

Covers hazardous substance cleanup, remediation and response operations and includes safety and health requirements, site characterization, and emergency response training, under OSHA mandate.

49 CFR 176,  
Subpart C

Contains general handling and storage requirements for shipments by water.

49 CFR 177,  
Subpart B

Contains loading and unloading requirements for shipments by public highway.

49 CFR 311

Describes training that may be used to satisfy DOT training requirements in 49 CFR 172.7 to avoid duplication.

DOE 460.2

Establishes DOE loading methods and tiedown requirements.

### 2. Operational Training

49 CFR 172, Subpart H	Contains training requirements for hazardous materials employees covering general awareness, function specific, and safety areas.
29 CFR 1910.120	Covers emergency related training under the OSHA mandate.
10 CFR 73, Appendix D	Provides training related requirements for material handling.
DOE 5632.1C	Provides training related requirements for material handling.
49 CFR 173, Subpart B	Covers the preparation of hazardous materials for transportation.
49 CFR 173, Subpart C	Covers material preparation, and packaging requirements or exceptions.
49 CFR 174, Subpart C	Contains general handling and loading requirements or exceptions.
49 CFR 175, Subpart B	Contains loading, unloading, and handling requirements for air transport.

### 3. Emergency Preparedness

49 CFR 172, Subpart G	Provides emergency response information for shipping papers.
49 CFR 172, Subpart H	Contains emergency response training requirements.
DOE 151.1	Establishes policies and procedures for emergency management activities.

## Transportation Planning Matrix

	Operational Functions											
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Technical Assistance	2								4	4	5	2
Emergency Preparedness	4	2	2	3	3	3	3	2	3	3	2	
Advance Shipment Information	5								5	5	4	
Operational Training				2	2	2	2					
←-----Quality Management Performed throughout Operations (DOE 5700.6C)-----→												

## Carrier Selection<sup>59</sup>

### 1. Regulatory Compliance

- DOE 460.2 Requires use of American flag carriers over foreign flag vessels when available.
- DOE 5632.IC States that a motor carrier selected to transport irradiated reactor fuel shall have a satisfactory safety record, and an adequate level of financial responsibility.

49 CFR 172, Subpart G

Provides emergency response information for shipping papers.

49 CFR 172, Subpart H

Contains emergency response training requirements.

DOE 151.1

Establishes policies and procedures for emergency management activities.

### 2. Emergency Preparedness

<sup>59</sup>DOE has a Motor Carrier Evaluation Program to assist in the selection of qualified motor carriers. A similar program is being considered for rail carriers. Selecting a single line carrier is preferred, if otherwise feasible.



## Transportation Planning Matrix

	Operational Functions											
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Technical Assistance	2								4	4	5	2
Emergency Preparedness	4	2	2	3	3	3	3	2	3	3	2	
Advance Shipment Information	5								5	5	4	
Operational Training				2	2	2	2					
←-----Quality Management Performed throughout Operations (DOE 5700.6C)-----→												

## Routing Decisions

### 1. Regulatory Compliance

10 CFR 73 Provides for NRC approval of rail and highway routes used for shipments of spent fuels and of ports where vessels carrying spent fuel are scheduled to stop.

49 CFR 397.101 FHWA mandates the routes over which all radioactive materials shall be transported to minimize radiological risk, and prescribes preferred routes when Highway Route Controlled Quantity (HRCQ) is involved.

49 CFR 397.101(d)

Requires that the carrier provide the shipper of HRCQ with a copy of the written route plan before departure and notify the shipper of any deviation as soon as practicable.

49 CFR 397.103

Specifies the FHWA procedures by which States may establish designated routes.

DOE 5632.IC Requires a written highway route plan. Also requires that, when routing by rail, consideration be given to safety and time in transit factors and specifies that consultation with the Federal Rail Administration may be necessary in determining a route.

DOE Environmental Justice Strategy for Executive Order 12898

Promotes a “Partnership in Participation” approach with stakeholders including the general public, affected communities, Federal, Tribal, State, and local governments in the early stages of planning and implementing environmental justice procedures.

## 2. Public Participation and Information

NEPA National Environmental Policy Act of 1969.

AIRFA American Indian Religious Freedom Act Addresses public involvement at Tribal sites.

Congressionally mandated requirements Apply to specific sites such as the Waste Isolation Pilot Plant (WIPP).

DOE Public Involvement Policy Specifies the need to involve the public in matters pertaining to activities such as transportation.

DOE American Indian Policy Provides general guidance to DOE personnel for management actions affecting Tribes. Emphasizes implementation of such activities in a knowledgeable and sensitive manner.

Section III of this Guide

Describes context in which DOE decisions are made: (1) Identify and interact with stakeholders. (2) Public affairs specialists interact with media sources, respond to information requests, and facilitate public forums.

Section IV of this Guide

Outlines stakeholder involvement considerations.

## 3. Emergency Preparedness

49 CFR 172, Subpart G

Provides emergency response information for shipping papers.

49 CFR 172, Subpart H

Contains emergency response training requirements.

DOE 151.1

Establishes policies and procedures for emergency management activities.

#### 4. Technical Assistance

49 USC 5116	Provides information on technical assistance involving DOT planning and training grants.
NWPA	Nuclear Waste Policy Act requires DOE to provide assistance for training of State, local, and Tribal personnel affected by spent commercial fuel transportation.
WIPP	Waste Isolation Pilot Plant allows DOE to purchase equipment for States as part of technical assistance.
WLWA 1992	WIPP Land Withdrawal Act allows DOE to provide funds for training and to enter into agreements with States and Tribes to provide monetary or in-kind assistance in acquiring equipment.
Section III of this Guide	Provides information on how to identify and coordinate technical assistance efforts.

#### 5. Advance Shipment Information

49 CFR 397. 101	Requires that, once mode and route are established, advance shipment information be disseminated to affected parties.
10 CFR 73	Sets forth escort and notification requirements.
DOE 460.2	Sets forth the Shipment Notification Policy for shipments of unclassified high-level waste and spent fuel. If it is appropriate, State and Tribal governors are notified by messenger at least four days prior to transport through a State or by mail postmarked seven days prior to such occurrence.  Requires TRANSCOM to be used on unclassified spent fuel and high level waste shipments. Transuranic waste transported to WIPP will also be tracked by TRANSCOM according to policy.





## Transportation Planning Matrix

	Operational Functions											
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Advance Shipment Information	5								5	5	4	
Operational Training				2	2	2	2					
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## Consignment Scheduling

### 1. Regulatory Compliance

- 49 CFR 397.101 Requires, for radioactive materials shipments requiring placarding, that the vehicle operator consider time of day and day of week as factors impacting the level of radiological risk when scheduling movement.
- 49 CFR 173.22 States that the shipper shall notify consignee of the dates of shipment and expected arrival for shipments.

DOE 460.2

Requires of HRCQ shipments and like quantities a shipping plan including schedules to be provided to DOE NTP/AL 45 days in advance of the shipments.

Sets forth the Shipment Notification Policy for shipments of unclassified high-level waste and spent fuel. State and Tribal governors are notified by

messenger at least four days prior to transport through a State or by mail postmarked seven days prior to such occurrence.

## 2. Public Participation and Information

NEPA	National Environmental Policy Act of 1969.
AIRFA	American Indian Religious Freedom Act Addresses public involvement at Tribal sites.
Congressionally mandated requirements	Apply to specific sites such as the Waste Isolation Pilot Plant (WIPP).
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Section IV of this Guide

Outlines stakeholder involvement considerations.

## 3. Emergency Preparedness

49 CFR 172, Subpart G

Provides emergency response information for shipping paper.

49 CFR 172, Subpart H

Contains emergency response training requirements.

DOE 151.1

Establishes policies and procedures for emergency management activities.

#### 4. Technical Assistance

NWPA	Nuclear Waste Policy Act requires DOE to provide assistance for training of State, local, and Tribal personnel affected by spent commercial fuel transportation.
WIPP	Waste Isolation Pilot Plant allows DOE to purchase equipment for States as part of technical assistance.
WLWA 1992	WIPP Land Withdrawal Act allows DOE to provide funds for training and to enter into agreements with States and Tribes to provide monetary or in-kind assistance in acquiring equipment.
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## Transportation Planning Matrix

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Technical Assistance	2								4	4	5	2
Emergency Preparedness	4	2	2	3	3	3	3	2	3	3	2	
Advance Shipment Information	5								5	5	4	
Operational Training					2	2	2	2				
←-----Quality Management Performed throughout Operations (DOE 5700.6C)-----→												

## Shipment Tracking

### 1. Regulatory Compliance

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986.	49 CFR 397.101	Covers incidents involving a release of radioactive contents. Notifications are governed by 171.15.
49 CFR 176.710	Resource Conservation and Recovery Act of 1976, as amended by the Hazardous and Solid Amendments of 1984.	DOE 5632. IC	Requires, for shipments of irradiated fuel, that shipper (licensee) escorts make status calls to the communications center for road and rail and when vessel is in part pursuant to 10 CFR 73.37 (b) (11).

Requires that shipments of irradiated fuel be accompanied by an escort able to periodically relay to the communications center for road and rail and when vessel is in port pursuant to 10 CFR 73.37 (b) (11).

Involvement Policy

in matters pertaining to activities such as transportation.

DOE American Indian Policy

Provides general guidance to DOE personnel for management actions affecting Tribes. Emphasizes implementation of such activities in a knowledgeable and sensitive manner.

DOE Environmental Justice Strategy for Executive Order 12898

Promotes a “Partnership in Participation” approach with stakeholders including the general public, affected communities, Federal, Tribal, State, and local governments in the early stages of planning and implementing environmental justice procedures.

## 2. Emergency Preparedness

49 CFR 172, Subpart G	Provides emergency response information for shipping papers.
49 CFR 172, Subpart H	Contains hazardous materials employee training requirements.
DOE 151.1	Establishes policies and procedures for emergency management activities.

## 3. Public Participation and Information

NEPA	National Environmental Policy Act of 1969.
AIRFA	American Indian Religious Freedom Act Addresses public involvement at Tribal sites.
Congressionally mandated requirements	Apply to specific sites such as the Waste Isolation Pilot Plant (WIPP).
DOE Public	Specifies the need to involve the public

Section III of this Guide Describes context in which DOE decisions are made: (1) Identify and interact with stakeholders. (2) Public affairs specialists interact with media sources, respond to information requests, and facilitate public forums.

Section IV of this Guide Outlines stakeholder involvement considerations.

#### 4. Advance Shipment Information

49 CFR 397.101 Requires that, once mode and route are established, advance shipment information be disseminated to affected parties.

10 CFR 73 Sets forth escort and notification requirements.

DOE 460.2 Sets forth the Shipment Notification Policy for shipments of unclassified high-level waste and spent fuel. State and Tribal governors are notified by messenger at least four days prior to transport through a State or by mail postmarked seven days prior to such occurrence.  
  
Requires TRANSCOM to be used on unclassified spent fuel and high level

waste shipments. Transuranic waste transported to WIPP will also be tracked by TRANSCOM according to policy.

#### 5. Technical Assistance

49 USC 5116 Provides information on technical assistance involving DOT planning and training grants.

NWPA Nuclear Waste Policy Act requires DOE to provide assistance for training of State, local, and Tribal personnel affected by spent commercial fuel transportation.

WIPP Waste Isolation Pilot Plant allows DOE to purchase equipment for States as part of technical assistance.

WLWA 1992 WIPP Land Withdrawal Act allows DOE to provide funds for training and to enter into agreements with States and Tribes to provide monetary or in-kind assistance in acquiring equipment.

Section III of this Guide Provides information on how to identify and coordinate technical assistance efforts.





## Transportation Planning Matrix

	Operational Functions											
Coordination Functions	Advance Planning Process	Material Characterization	Transport Mode Selection	Package Selection	Documentation	Marking, Labeling, Placarding	Material Handling	Carrier Selection	Routing Decisions	Consignment Scheduling	Shipment Tracking	Delivery Verification and Feedback
Regulatory Compliance	1	1	1	1	1	1	1	1	1	1	1	1
Public Participation and Information	3	3	3						2	2	3	3
Technical Assistance	2								4	4	5	2
Emergency Preparedness	4	2	2	3	3	3	3	2	3	3	2	
Advance Shipment Information	5								5	5	4	
Operational Training					2	2	2	2				
←-----Quality Management Performed throughout Operations (DOE 5700.6C)-----→												

## Delivery Verification and Feedback

### 1. Regulatory Compliance

49 CFR 397.101(g)	Requires that the carrier notify the DOT/FHWA within 90 days of acceptance of an HRCQ shipment.
DOE 460.1A	Establishes notification procedures for fissile and above Type A shipments, the shipment/delivery dates, late deliveries, misdirected shipments, and return receipts.
CERCLA	Comprehensive Environmental

Response, Compensation, and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986.

### 2. Technical Assistance

49 USC 5116	Provides information on technical assistance involving DOT planning and training grants.
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NWPA	Nuclear Waste Policy Act requires DOE to provide assistance for training of State, local, and Tribal personnel affected by spent commercial fuel transportation.	mandated requirements	Waste Isolation Pilot Plant (WIPP).
WIPP	Waste Isolation Pilot Plant allows DOE to purchase equipment for States as part of technical assistance.	DOE Public Involvement Policy	Specifies the need to involve the public in matters pertaining to activities such as transportation.
WLWA 1992	WIPP Land Withdrawal Act allows DOE to provide funds for training and to enter into agreements with States and Tribes to provide monetary or in-kind assistance in acquiring equipment.	DOE American Indian Policy	Provides general guidance to DOE personnel for management actions affecting Tribes. Emphasizes implementation of such activities in a knowledgeable and sensitive manner.
Section III of this Guide	Provides information on how to identify and coordinate technical assistance efforts.	DOE Environmental Justice Strategy for Executive Order 12898	Promotes a “Partnership in Participation” approach with stakeholders including the general public, affected communities, Federal, Tribal, State, and local governments in the early stages of planning and implementing environmental justice procedures.
RCRA	Resource Conservation and Recovery Act of 1976, as amended by the Hazardous and Solid Waste Amendments of 1984.		

### 3. Public Participation and Information

NEPA	National Environmental Policy Act of 1969.	Section III of this Guide	Describes context in which DOE decisions are made: (1) Identify and interact with stakeholders. (2) Public affairs specialists interact with media sources, respond to information requests, and facilitate public forums.
AIRFA	American Indian Religious Freedom Act addresses public involvement at Tribal sites.	Section IV of this Guide	Outlines stakeholder involvement considerations.
Congressionally	Apply to specific sites such as the		

## IX. Acronyms

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CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	PSM	Prospective Shipment Module
CFR	Code of Federal Regulations	RAM	Radioactive material
CRCPD	Conference of Radiation Control Program Directors, Inc.	RAP	Radiological Assistance Program
CVSA	Commercial Vehicle Safety Alliance	RCRA	Resource Conservation and Recovery Act
DOE	U.S. Department of Energy	RCO	Regional Coordinating Office
DOT	U.S. Department of Transportation	RMIR	Radioactive Materials Incident Reporting (Database)
EM	DOE Office of Environmental Management	SRS	Savannah River Site
EMGs	DOE Emergency Management Guides	SSEB	Southern States Energy Board
EMS	Emergency Management System	TEC/WG	Transportation External Coordination Working Group
EMT	Emergency Management Team	TEPP	Transportation Emergency Preparedness Program
EPA	Environmental Protection Agency	TIN	Transportation Information Network
ERG	U.S. DOT North American Emergency Response Guidebook	TL	Truck load
ES&H	Environment, Safety and Health	TOM	Transportation Operations Manual
ETAS	Enterprise Transportation Analysis System	TRANSAX	Transportation (Emergency Response) Exercise
HQ	(DOE) Headquarters	TRANSCOM	Transportation Tracking and Communications System
HRCQ	Highway Route Controlled Quantity	UETC	Urban Energy and Transportation Corporation
IATA	International Air Transport Association	USC	United States Code
ICAO	International Civil Aviation Organization	WGA	Western Governors' Association
LGN	Local Government Network	WIPP	Waste Isolation Pilot Plant
LTL	Less-than-truckload	WWW	World Wide Web
M&I	Management and Integration (Contractor)		
M&O	Management and Operations (Contractor)		
MCEP	Motor Carrier Evaluation Program		
NEPA	National Environmental Policy Act		
NRC	Nuclear Regulatory Commission		
NTP	National Transportation Program		
NWPA	Nuclear Waste Policy Act		
OSHA	Occupational Safety and Health Administration		



## **X. Work Plan Information**

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Add supporting documentation for your specific transportation planning needs in this section.

